

c. transmitting a sequence of second electrical signals from the railcars, with one of said second electrical signals being transmitted for each railcar upon receipt of the pressure pulse at that respective railcar; and

d. determining the relative order at each railcar in the train as a function of the time of receipt of said second electrical signals.

Claims 22, 29, 41 and 44 have been amended to more clearly define applicant's disclosure.

Claims 22, 23, 26-35 and 37-50 and 52-57 are rejected as anticipated by Stevens. Each of the Independent Claims 22, 28, 29, 32 and 38 and 41 recites, inter alia, the limitation that the order of the railcars is determined based on the difference in time between the receipt of a signal transmitted from the immediately preceding railcar and a pneumatic pulse.

The final Office Action improperly states that "the issue is whether or not the prior art reference to Stevens et al suggests measuring the time between the receipt of the last RF transmission from a preceding railcar and the receipt of the pressure pulse." As the Office is clearly aware, in order to serve as the basis for an anticipation rejection, the issue is not whether the reference suggests the claim limitations, but rather whether the reference discloses every element of the claimed invention. By asserting that the Stevens reference suggests one of the claim limitations the Office acknowledges that this limitation is not disclosed and thus Stevens can not serve as the basis for a 102 rejection.

Thus, applicant understands that the final Office Action is rejecting all claims as obvious over Stevens. However, the Stevens, reference does not suggest the claim limitations as asserted by the Office Action, and therefore cannot serve as the basis of an obviousness rejection.

Stevens discloses a system or method for determining the physical order or the plural railcars by measuring a parameter which varies along the length of the train. (see Col. One embodiment disclosed in Stevens is a system in which a single synchronization signal is used in combination with a single serial signal to provide a time difference measurement which varies along the length of the train in order to determine the order of the railcars in a train. The time difference being measured is the difference in time at each railcar between the receipt of the single serialization signal and the single serial signal. Because the serialization signal and serial signal are propagating at different speeds, and because only a single synchronization signal and a signal serial signal are used, the time difference measured at each railcar varies along the length of the train, i.e., "increases as the position of the car increases along the trainline from the trainline controller." (Col. 4, lines 43-45; emphasis supplied).

In contrast, applicant's disclosure is directed to a system and method by measuring a parameter which does not vary along the length of the train. Applicant determines the order of the railcars based on the difference in time between the receipt of a signal transmitted from the immediately preceding railcar and a pneumatic pulse which is propagating along the train. Because each railcar transmits a signal as soon as it detects the pneumatic pulse, the time difference between the receipt of the signal transmitted

from the immediately preceding railcar and the pneumatic pulse is approximately the same at each railcar. The Office Action does not provide any motivation for modifying the teaching of Stevens, i.e., determining physical order of railcars by measuring a parameter which varies along the length of the train, in order to come up with the applicant's system and method of determining physical order of railcars by measuring a parameter which does not vary along the length of the train.

Moreover, applicant's disclosure is directed at solving a problem that is not even recognized in Stevens, i.e., the difficulty in ensuring a single synchronization signal and a single serial signal are received at all railcars. For example, when the synchronization signal is an RF signal, the RF propagation path can be seriously degraded by the propagation environment, the length of the trainline and interference from other transmitters. By way of another example, when the serial signal is a brake pressure pulse, the pressure pulse tends to smear as it propagates through the brake pipe making it more difficult for the railcars more distant from the transmitting locomotive to determine an accurate time of receipt of the brake pulse. In order to overcome these problems, applicant discloses the use of multiple synchronization signals, i.e., the transmission from the immediately preceding railcar. By determining the relative order of the train based on a signal transmitted from the immediately preceding railcar, the RF propagation path is greatly reduced making it more likely that each railcar will receive the transmission as compared to a single synchronization signal transmitted along the entire length of the train. Clearly, there is no teaching or suggestion to modify Stevens to determine the order of the railcars based on the time difference between receipt at each railcar of the

identification message transmitted by the immediately preceding railcar and the receipt of the serial signal.

In Stevens, the only disclosure of a transmission from a railcar is the transmission of the "identification message" from each railcar which includes an identification of the transmitting node as well as the measured parameter. (Col. 4, lines 12-14). The identification message "allows the trainline controller 20 to serialize or determine the position of each node within the train as well as allowing the car electronics 30 on each car to determine its position within the train." (Col. 4, lines 13-16). There is absolutely no teaching or suggestion of using the time of receipt of an identification message at subsequent railcars to determine the relative order of the railcars. Clearly, there is no teaching or suggestion whatsoever that the time of receipt of the identification message transmitted by a railcar is used for anything in Stevens, let alone that the order of the railcars can be determined based upon the difference in time between the receipt of a signal transmitted by a preceding railcar and the receipt of a pneumatic pulse.

Reconsideration and allowance of Independent Claim 22, 28, 29, 32 and 38 and 41 is solicited.

Claims 23-27, 30, 31, 33-37, 39, 40, and 42 ultimately depend from the above identified independent Claims and are therefore allowable with their respective base claims without recourse to the further patentable limitations respectively recited therein.

Likewise, Independent Claims 43 recites the limitation, *inter alia*, that each railcar determines its relative position using the time of receipt of a signal received in closest proximity to the pneumatic signal. In Stevens the relative position is determined based

on the time difference between the synchronization signal and serial signal without regard to whether the synchronization signal is closest in proximity to the pneumatic signal.

Reconsideration and allowance of Claim 43 is solicited.

Claims 44, 52 and 57, each recite, *inter alia*, that the relative position of a railcar is determined based upon the time of receipt of a signal from another railcar transmitted upon receipt of the pressure pulse at the other railcar. Stevens determines the relative position of the railcars without regard to the receipt of a signal from another railcar transmitted upon receipt of the pressure pulse at the other car. Reconsideration and allowance of Claims 44, 52 and 57 is requested.

Claims 45-50 and 53-56 ultimately depend from Claims 44 and 52, respectively, and are therefore allowable with their respective base claims without recourse to the further patentable limitations respectively recited therein.

Applicant respectfully requests reconsideration and allowance of all pending claims.

Respectfully submitted,



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